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Description of one new species and three new subspecies of butterflies from China (Lepidoptera: Nymphalidae, Hesperiidae)

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Abstract: Morphological and molecular evidence reveals four new taxa of butterflies from China: *Ochlodes wuqunzheni* Huang & Wu **sp. nov.** from Fujian, *Ochlodes bouddha yupengi* Huang & Wu **ssp. nov.** from SE Xizang, *Capila lidderdali limini* Huang & Wu **ssp. nov.** from Fujian, and *Lethe luteofasciata xiyuanae* Huang, Wu & Yu **ssp. nov.** from Yunnan. *Ochlodes siva yuchingkina* Murayama & Shimonoya, 1963 is elevated to full species, *Ochlodes yuchingkina* **stat. nov.**

Keywords: China, *Ochlodes*, *Capila*, *Lethe*, new species, new subspecies, Nymphalidae, Hesperiidae

中国蝶类一新种及三新亚种记述（鳞翅目：蛱蝶科，弄蝶科）

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摘要：形态学与分子生物学研究揭示了中国四个蝴蝶新分类单元：产自福建的吴群阵赭弄蝶（*Ochlodes wuqunzheni* Huang & Wu **sp. nov.**）、产自西藏东南部的菩提赭弄蝶于鹏亚种（*Ochlodes bouddha yupengi* Huang & Wu **ssp. nov.**）、产自福建的里氏大弄蝶李闽亚种（*Capila lidderdali limini* Huang & Wu **ssp. nov.**）以及产自云南的黄带黛眼蝶溪湲亚种（*Lethe luteofasciata xiyuanae* Huang, Wu & Yu **ssp. nov.**）。此外，将湿婆赭弄蝶余清金亚种（*Ochlodes siva yuchingkina* Murayama & Shimonoya, 1963）（见文后注）的分类地位提升为独立种，即余清金赭弄蝶（*Ochlodes yuchingkina* **stat. nov.**）。

关键词：中国，赭弄蝶属，大弄蝶属，黛眼蝶属，新种，新亚种，蛱蝶科，弄蝶科

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Introduction

This study consists of two parts. The first part is a collaborative study on some species of the family Hesperiidae conducted by the first and second authors, with the third author not participating. The second part is a study on *Lethe luteofasciata* (Poujade, 1884), in which all three authors jointly participated.

The second author had long noticed that specimens of *Ochlodes bouddha* (Mabille, 1876) from Fujian and *Capila lidderdali* (Elwes, 1888) from Fujian exhibited significant wing pattern differences compared to their respective nominate subspecies. This observation was communicated to the first author. However, due to the first author's involvement in other projects, no immediate progress was made. Later, the second author obtained an unusual specimen of *Ochlodes bouddha* from Motuo, Xizang, and provided it to the first author for study. This collaboration eventually formed the main part of the present paper.

The study on *Lethe luteofasciata* was noticed almost simultaneously by all three authors. In 2024, a small series of specimens from Yunnan appeared on the Xianyu online marketplace (闲鱼). Both the second and third authors purchased specimens from this batch and observed that the Yunnan specimens were clearly distinguishable from the nominate subspecies from Sichuan. Meanwhile, a friend of the first author, Peng Li (李鹏), had already collected a specimen from Lijiang, Yunnan, in 2023. The first author had noted its distinctiveness at that time. Later, in 2025, the first author collected a female specimen of the same species from Lijiang, Yunnan. Through subsequent communication, the three authors decided to combine their materials for a joint study, which formed the nymphalid part of this paper.

Material and methods

Method. The barcode fragment of the mitochondrial COI gene (645 bp), along with two fragments of the nuclear EF1-alpha gene (1114 bp) and one fragment of the nuclear Rps5 gene (572 bp), was analyzed to infer the phylogenetic relationships among species of the genus *Lethe* Hübner. Similarly, the barcode fragment of the mitochondrial COI gene (645 bp), one fragment of the nuclear EF1-alpha gene (1062 bp), and one fragment of the nuclear Rps5 gene (572 bp) were analyzed to infer the phylogenetic relationships among species of the genus *Ochlodes* Scudder. For *Capila* Moore species, only the barcode fragment of the mitochondrial COI gene (645 bp) was analyzed for the same purpose.

DNA extraction was conducted by Beijing Tsingke Biotech Co., Ltd. (Beijing, China). The primers used for *Lethe* species are identical to those of Huang (2025). The primers of the nuclear EF1-alpha gene used for *Ochlodes* species are shown in Tables 1-2. Ambiguous bases (degenerate codes) were used to represent heterozygous sites in the nuclear gene segments to minimize the introduction of phylogenetic noise from allelic variation. Phylogenetic analyses were conducted using the maximum likelihood (ML) approach in PhyloSuite (Zhang *et al*. 2020; Xiang *et al*. 2023). In the analysis of nuDNA (EF1-alpha and Rps5) sequences only, ModelFinder v2.2.0 (Kalyaanamoorthy *et al*. 2017) was used to select the best-fit partition model (Edge-unlinked) using the BIC criterion.

Accession numbers. The mitochondrial COI gene sequences of the examined specimens in this study have been deposited in GenBank under the accession numbers PZ276963–PZ276968 (*Ochlodes*: COI), PZ276969–PZ276976 (*Capila*: COI), and PZ276977–PZ276991 (*Lethe*: COI). The Rps5 (ribosomal protein S5) and EF1a (elongation factor 1-alpha) gene sequences are available under the accession numbers PZ281144–PZ281149 (*Ochlodes*: EF1a), PZ281150–PZ281165 (*Lethe*: EF1a), PZ281166–PZ281170 (*Ochlodes*: Rps5), and PZ281171–PZ281186 (*Lethe*: Rps5).

All sequenced specimens are associated with voucher numbers, which are clearly indicated in the relevant figures.

TABLE 1. Forward and reverse primers names in this study for *Ochlodes* species

Gene	Forward primers	Reverse primers	References
EF1a part1	ef44	ef684	Monteiro & Pierce 2001; Kandul *et al*. 2004
EF1a part2	ELF2F	efrcM4	Wan *et al*. 2013; Cho *et al*. 1995

TABLE 2. Primers sequences in this study for *Ochlodes* species

Primers	Sequences	Annealing temperature
ef44	GCYGARCGYGARCGTGGTATYAC	62.4
ef684	TCCTTRCGCTCCACSTGCCAYCC	55
ELF2F	AAAATGCCCTGGTTCAAGGGA	55-57
efrcM4	ACA GCV ACK GTY TGY CTC ATR TC	55-57

Taxonomy

Hesperiidae

Ochlodes bouddha (Mabille, 1876) 菩提赭弄蝶

Only two subspecies are recognized in the molecular analyses conducted in this work (Figs 21–23), with Kimura 2-parameter distances in the COI barcode greater than 0.016 between them, whilst all other relatives, which exhibit distances greater than 0.032 from *O. bouddha* (Fig. 24), are recognized as distinct species from *O. bouddha*.

Ochlodes bouddha bouddha (Mabille, 1876) 菩提赭弄蝶指名亚种

Figs 1, 6, 7, 9

Pamphila bouddha Mabille, 1876: lvi (Type locality: not stated); Leech, 1893: 604, ♂ type designation, type locality clarified as Moupin, pl. XLI, fig. 14 for ♂ lectotype.

Augiades bouddha var. *consors* Leech, 1893: 604; Mabille, 1909: 348, synonymy for *Pamphila bouddha*.

Augiades bouddha: Mabille, 1909: 348, key to species.

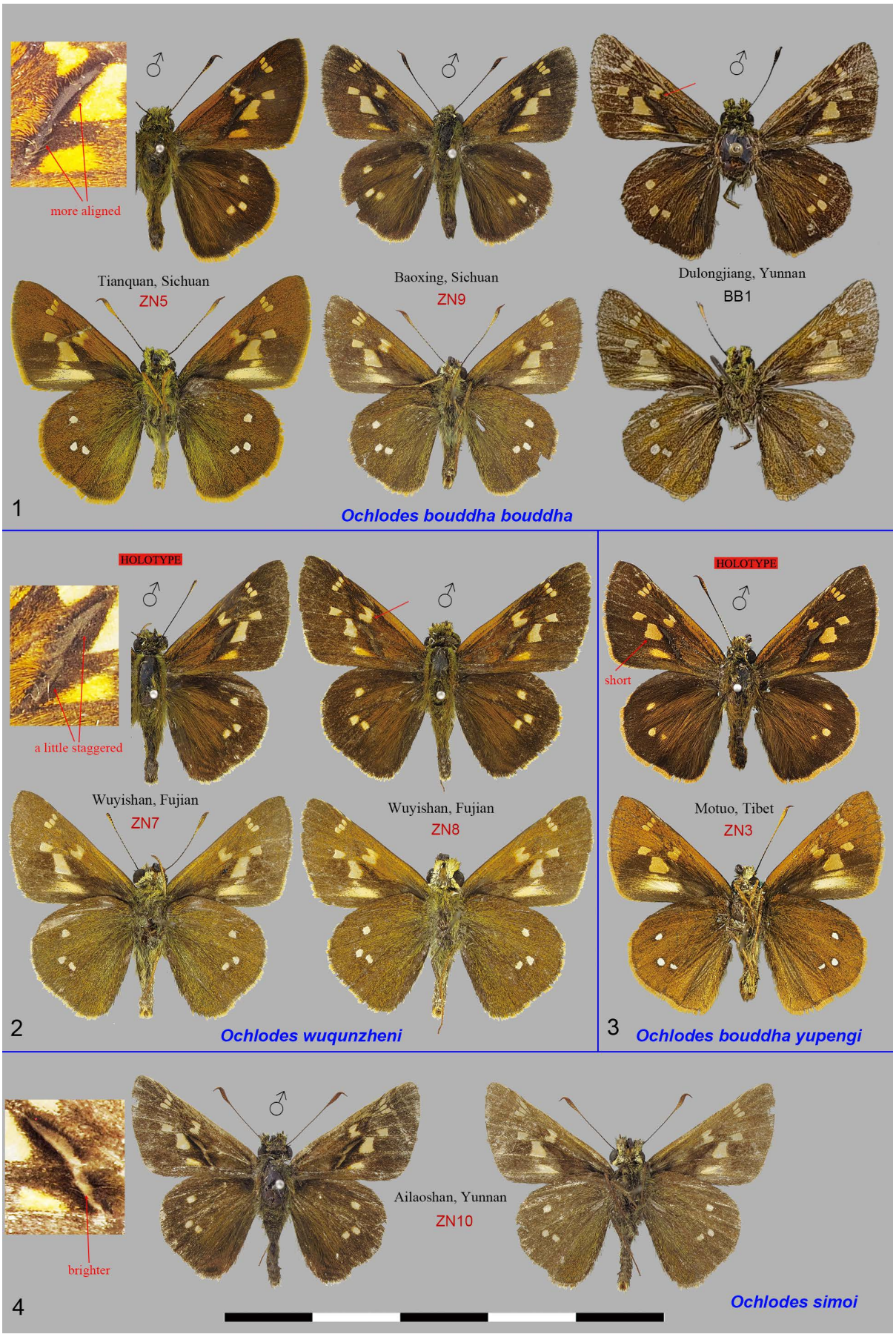
Ochlodes bouddha: Evans, 1949: 356, historical review, key and record for 8 ♂♂ & 2 ♀♀ from N Burma; Chiba & Tsukiyama, 1996: pl. 2 - fig. 17 for ♂ from Thailand, pl. 3 - fig. 5 for ♀ from Thailand, pl. 4 - fig. 15 for ♂ genitalia from Thailand; Yuan, Yuan & Xue, 2015: 525-527, partim on ♂ from Nansan, Zhenkang, Yunnan, fig. 239 for ♂ genitalia; Wu & Hsu, 2017: 1401, figs. 1–2 for ♂ & ♀ from Fengxian, Shaanxi, fig. 3 for ♂ from Tongren, Guizhou; Inayoshi, 2023: review of records for Indo-China; Huang, 2023: 333, fig. 29-O4 for ♂ from Lushui, W Yunnan, 334, fig. 31-O4 for ♂ genitalia; Chiba, Tsukiyama & Bozano, 2025: 64, figs. for ♂♂ & ♀♀ from Jiuzhaigou, Baoxing, Erlangshan, and fig. for ♂ aedeagus from Tiantaishan, Shaanxi.

Material. 1 ♂ (Institute of Zoology, Chinese Academy of Science, Beijing), Gengma, SW Yunnan, no further data, dissected; 1 ♂ (coll. H Huang), Lushui, Nujiang Pref., W Yunnan, 10.VI.2014, 2450 m, XD Yang leg.; 1 ♂ (coll. H Huang), Erlangshan, Tianquan, Sichuan, 2190 m, 10.VII.2025, H Huang leg.; 1 ♂ (coll. H Huang), N Baoxing, Sichuan, 2200 m, 24.VII.2023, H Huang leg.; 1 ♂ (coll. ZJ Wu), Dulongjiang, Gongshan, NW Yunnan, 1500 m, 6.VI.2017, ZJ Wu leg.

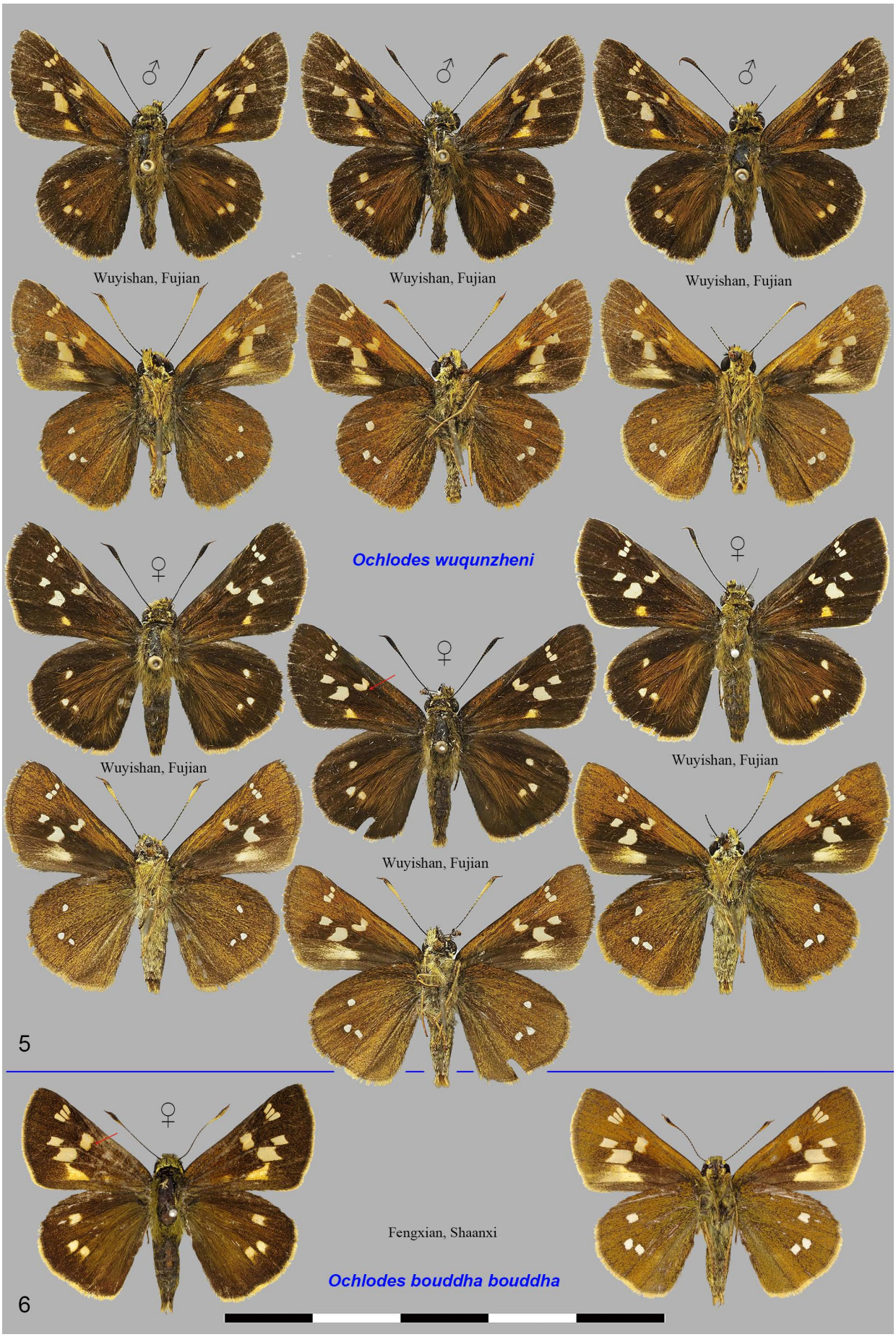
Remarks. The diagnostic characters distinguishing this species from its close relatives appear to be restricted to the shape of the right terminal branch of the aedeagus, which is short and plate-like. Unfortunately, no fresh DNA samples from Yunnan were available for this study. Further investigation is still needed.

It is worth noting that, in lateral view, the gnathos of the male genitalia is less curved in the populations from Yunnan (Fig. 9) than in those from Sichuan (Fig. 7), with its bottom positioned closer to the dorsal surface of the uncus, as in *O. wuqunzheni* Huang & Wu **sp. nov.** (Fig. 8).

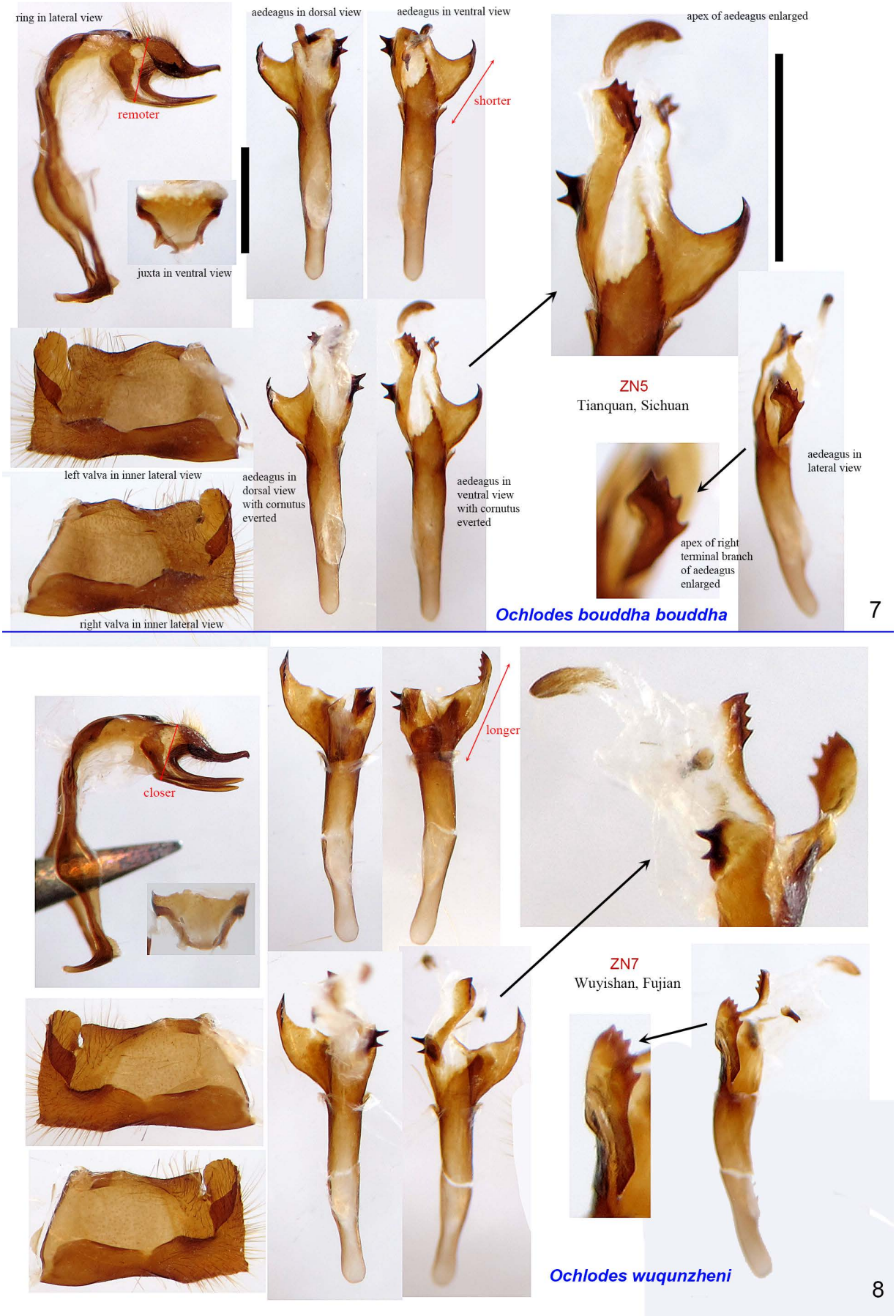
Range. Sichuan, S Shaanxi, S Gansu, N Guizhou, W & S Yunnan; N Myanmar; N Laos; N Thailand; N Vietnam.



FIGURES 1–4. Habitus of *Ochlodes* species, upperside & underside (some with male brand enlarged). Scale bar = 1 cm.

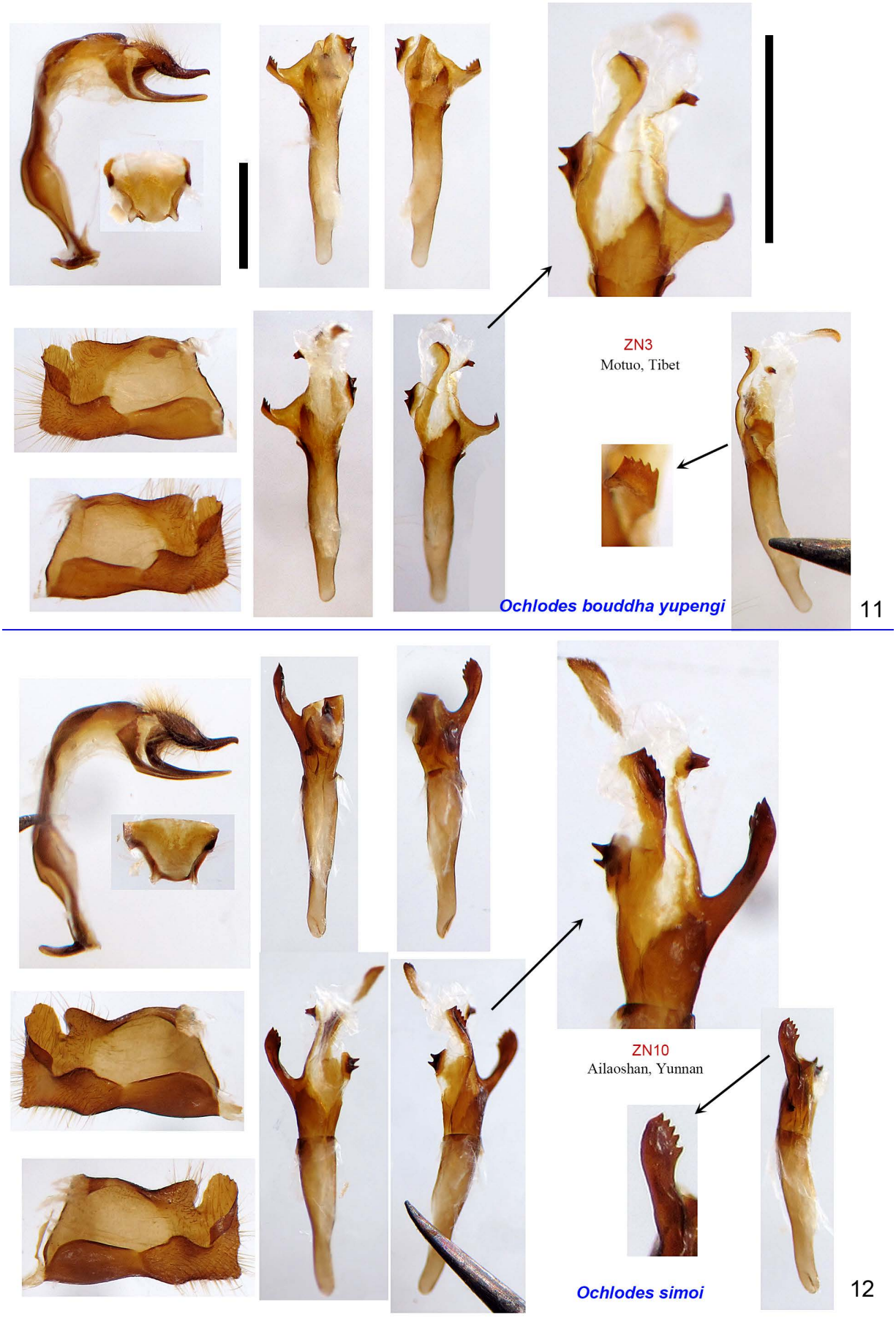


FIGURES 5–6. Habitus of *Ochlodes* species, upperside & underside. Scale bar = 1 cm.



FIGURES 7–8. Male genitalia of *Ochlodes* species. Scale bars = 1 mm. The longer scale bar applies to the enlarged views of the aedeagus details.

FIGURES 9–10. Male genitalia of *Ochlodes* species. Scale bars = 1 mm. Composition of structures similarly positioned as in Fig. 7.



FIGURES 11–12. Male genitalia of *Ochlodes* species. Scale bars = 1 mm. Composition of structures similarly positioned as in Fig. 7.

Ochlodes bouddha yupengi Huang & Wu ssp. nov. 菩提赭弄蝶于鹏亚种

https://zoobank.org/946CD4EF-E811-45F1-9864-8BFC445347C3

Figs 3, 11

Holotype: ♂ (Length of forewing 17.2 mm): China, Xizang, Motuo, Beibeng, Gelin (格林), 1767 m, 6.VII.2023, RJ Chen (陈荣嘉) leg. Deposited in Fujian Academy of Forestry Sciences, Fuzhou, China (福建省林业科学研究院). Sequenced (PZ276965, PZ281144, PZ281166) and dissected (Fig. 11).

Etymology. This new subspecies is named in honor of the third author of this paper, who is not an author of this part of the study.

Diagnosis. This new subspecies can be distinguished from the nominate subspecies by the following combination of characters:

1) Forewing discal spot in space 2 markedly shorter, indicating a narrower space 2 than in ssp. *bouddha*.

2) Forewing termen more convex than in ssp. *bouddha*.

3) Hindwing underside ground colour brighter, with more orange tinge.

4) Right terminal branch of aedeagus markedly narrower, with five teeth at apex (3-4 teeth in ssp. *bouddha*).

Discussion. This new subspecies is readily separable from the nominate subspecies on both the mtDNA gene tree (Fig. 21) and the nuDNA gene tree (Fig. 22). The Kimura 2-parameter distance in the barcode fragment of the mitochondrial COI gene (645 bp) (Fig. 24) is 0.016–0.019 between this new subspecies and the nominate subspecies.

Range. SE Xizang (Motuo).

Ochlodes yuchingkina Murayama & Shimonoya, 1963 stat. nov. 余清金赭弄蝶

Ochlodes siva yuchingkina Murayama & Shimonoya, 1963: 53 (Type locality: Mt. Sylvia = Xueshan), figs. 27-28 for ♂ holotype; Chiba *et al*. 2020: 281, explanation of TL from labels for holotype, figs. 7–9 for ♂ holotype and labels.

Ochlodes siva yuchingkinus: Hsu, 1989: 77–79, figs. 1–4 for ♀♀.

Ochlodes bouddha yuchingkinus: Chiba & Hsu, 1989: 268; Chiba, Hsu & Shirôzu, 1992: 131, checklist; Hsu, 2013: 132-133, figs. for ♂ & ♀; Hsu *et al*., 2019: 154-156, partim (except ♂ genitalia), pl. 11- figs. 90-91 for ♂ & ♀, pl. 48 - fig. 264 for ♀ genitalia.

Ochlodes bouddha yuchingkina: Chiba & Tsukiyama, 1996: 7, pl. 2 - fig. 24 for ♂, pl. 4 - fig. 16 for ♂ genitalia; Yuan, Yuan & Xue, 2015: 528.

Ochlodes bouddha yuchingkin (sic!): Chiba, Tsukiyama & Bozano, 2025: 64.

Remarks. This taxon is easily distinguished from *O. bouddha* by having a pair of well-separated cell spots on the forewing and smaller pale markings on both wings of both sexes. In the male genitalia, this taxon differs from *O. bouddha* by having the right terminal branch of the aedeagus narrower and uniform in width throughout, and by having the bottom of the gnathos positioned closer to the dorsal surface of the uncus. It is worth noting that the male genitalia identified as this taxon by Hsu *et al*. (2019: pl. 30, fig. 194) actually belong to *Ochlodes niitakanus* (Sonan, 1936). Fortunately, DNA sequence data of this taxon are available from GenBank. The independence of this taxon from *O. bouddha* is strongly supported by both the mtDNA gene tree (Fig. 21) and the nuDNA gene tree (Fig. 22), on which this taxon is widely separated from *O. bouddha* and *O. simoi* Huang, 2023 by a large gap. If *O. yuchingkina* and *O. bouddha* were treated as a single species, then *O. simoi*, which is remarkably different in appearance, would have to be considered a subspecies of *O. bouddha*.

（注：*Ochlodes siva* 目前流行的中名是雪山赭弄蝶，但这一中名源自一错误的鉴定。台湾特有种余清金赭弄蝶原始发表时是作为 *Ochlodes siva* 的一个亚种，因余清金赭弄蝶模式产地为台湾省台中雪山，故长期以来台湾省学者及爱好者将余清金赭弄蝶叫做雪山赭弄蝶，连带着将 *Ochlodes siva* 称为雪山赭弄蝶。余清金赭弄蝶后经形态学研究曾归入菩提赭弄蝶 *Ochlodes bouddha*，而经本研究应该为独立种。因此与余清金赭弄蝶毫无关联的 *Ochlodes siva* 不应再以台湾省台中雪山命名。根据其拉丁种名原意，*Ochlodes siva* 中名正式更正为湿婆赭弄蝶。）

Ochlodes wuqunzheni Huang & Wu sp. nov. 吴群阵赭弄蝶

Figs 2, 5, 8, 10

https://zoobank.org/AF9B7AD5-18A1-46E1-9BA3-5180BF99B779

Ochlodes bouddha bouddha: Yuan, Yuan & Xue, 2015: 527, partim for ♀ from Wuyishan, fig. 240 for ♀ genitalia.

Holotype: ♂ (Length of forewing 18.8 mm): China, Fujian, Wuyishan Nature Reserve, Huanggangshan (黄岗山), 1800-2000 m, 14.VII.2025, ZJ Wu leg. Deposited in the Biological Laboratory of Shanghai Normal University, Shanghai, China. Sequenced (PZ276963, PZ281147, PZ281169) and dissected (Fig. 8).

Paratypes: 1 ♂ (coll. H Huang, Qingdao), same data as holotype; 5 ♂♂, 4 ♀♀ (coll. ZJ Wu, Fuzhou), 8–10.VII.2022, ZJ Wu leg.

Etymology. The species is named in honor of Mr. Qun-Zhen Wu (吴群阵) of Sanming, a close friend of the second author and a butterfly ecological photographer.

Diagnosis. This new species is most similar to *Ochlodes bouddha* (Mabille, 1876), but can be distinguished from the latter by the following combination of characters:

1) Male brand on forewing upperside slightly staggered, rather than nearly straight as in *O. bouddha*.

2) Conjoined double spots at the end of the forewing cell in both sexes with their inner margin usually flat, or at most less emarginate than in *O. bouddha*.

3) Right terminal branch of aedeagus markedly longer than that of *O. bouddha*.

Discussion. The independence of the new species from *O. bouddha* is strongly supported by both the mtDNA gene tree (Fig. 21) and the nuDNA gene tree (Fig. 22), on which the new species is widely separated from *O. bouddha* and *O. simoi* Huang, 2023 by a large gap.

The Kimura 2-parameter distance in the barcode fragment of the mitochondrial COI gene (645 bp) (Fig. 24) is 0.034–0.037 between the new species and *O. bouddha*, and is 0.041 between the new species and *O. simoi*.

Range. Fujian.

Capila lidderdali (Elwes, 1888) 里氏大弄蝶

Figs 13-18

Three subspecies are recognized in this study, as stated below. A molecular analysis based on the barcode fragment of the mitochondrial COI gene reveals three parallel lineages (Fig. 25) within the species, with Kimura 2-parameter distances greater than 0.013 between one another. However, no differences in male genitalia are observed among the subspecies.

Capila lidderdali lidderdali (Elwes, 1888) 里氏大弄蝶指名亚种

Fig. 13

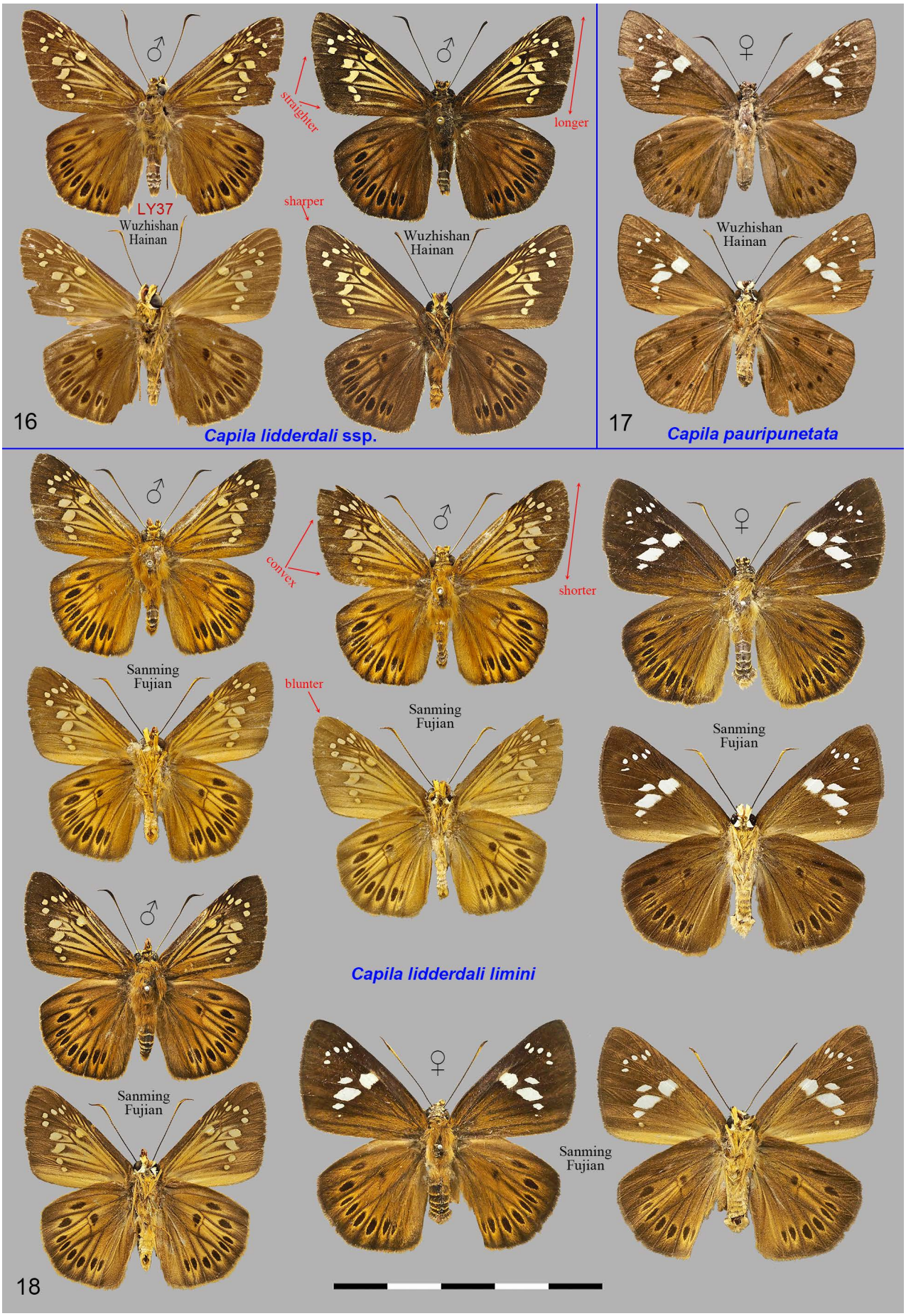
Chaetocneme lidderdali Elwes,1888: 459 (type locality: Sikkim or Buxa, [Bhutan]).

Capila lidderdali: Evans, 1949: 84, record of 1 ♀ from Assam; Masui & Uehara, 1999: 19, 22, figs. 22 for ♂ from Laos; Osada, Uemura & Uehara, 1999: 221, pl. 133, fig. for ♂ from Laos; Wu & Hsu, 2017: 1293, fig. 15 for ♀ from Motuo, first record for Chinese fauna; Sugimoto, 2019: 52, figs. 3-4 for ♂ & ♀ from Laos; Inayoshi, 2023: review of records for Indo-China.

Material. 1 ♂ (coll. H Huang), China, Yunnan, Xishuangbanna, Mohan, 1100 m, 16.V.2016, C Wu leg.; 1 ♀ (coll. ZJ Wu), China, SE Xizang, Motuo, 9.VIII.2015, ZJ Wu leg.

Range. S Yunnan, SE Xizang; Sikkim, Nepal, Assam, N Myanmar, N Laos, N Vietnam.

FIGURES 13–15. Habitus of *Capila lidderdali* (Elwes), upperside & underside. Scale bar = 1 cm.



FIGURES 16–18. Habitus of *Capila* species, upperside & underside. Scale bar = 1 cm.

Capila lidderdali limini Huang & Wu ssp. nov. 里氏大弄蝶李闽亚种

https://zoobank.org/4EBF7F37-EC0C-4DEC-A196-E0B5F1AD5761

Figs 15, 18

Holotype: ♀ (Length of forewing 27.7 mm): China, Fujian, Sanming, Youxi, 285 m, 23.VI.2022, ZJ Wu leg. Deposited in the Biological Laboratory of Shanghai Normal University, Shanghai, China. Sequenced (PZ276976).

Paratypes: 4 ♂♂, 8 ♀♀ (coll. ZJ Wu, Fuzhou), same locality as holotype, VI-VII, 2017, 2020 & 2022, ZJ Wu leg.

Etymology. The subspecies is named in honor of Mr. Min Li (李闽) of Fuzhou, a close friend of the first and the second authors.

Diagnosis. This new subspecies can be distinguished from the nominate subspecies (Fig. 13) by the following combination of characters:

1) Male: Forewing cell spot shorter and only touching the radius, not extending across the cell, whereas that of ssp. *lidderdali* extends from the radius to the cubitus across the entire cell.

2) Female: Forewing discal spot in space 2 with its inner margin consistently straight, not incurved as in ssp. *lidderdali*.

3) Female: Ochreous suffusion outside the postdiscal black spots on the hindwing upperside more extensive than in ssp. *lidderdali*, almost extending to the termen.

Range. Fujian.

Capila lidderdali ssp. 里氏大弄蝶海南亚种

Figs 14, 16

Capila lidderdali: Wu & Hsu, 2017: 1293, fig. 14 for ♂ from Wuzhishan, Hainan.

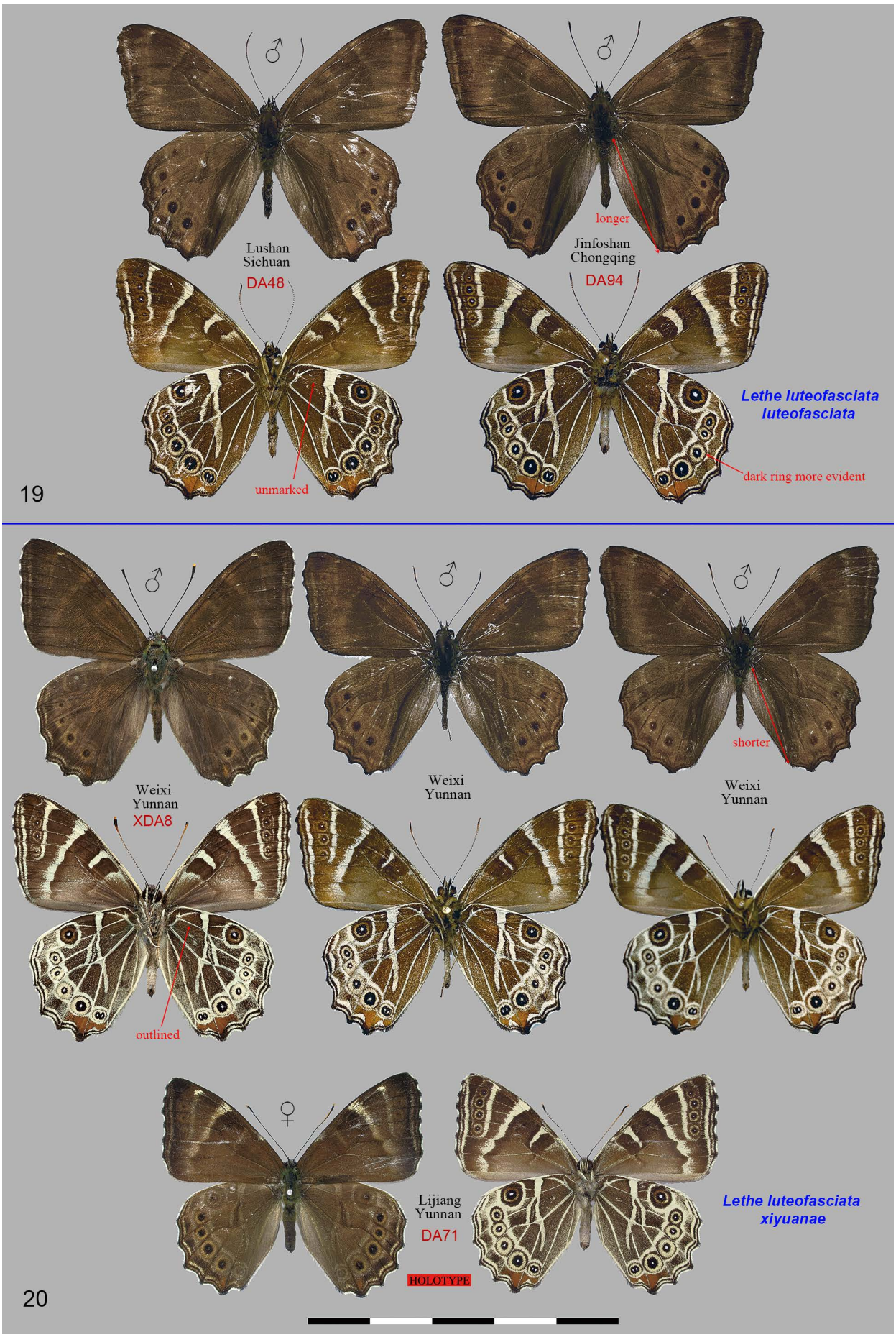
Material. 2 ♂♂ (coll. ZJ Wu), Hainan, Wuzhishan, 26.V.2005 & 11.VI.2017, ZJ Wu leg.; 1 ♀ (coll. ZJ Wu), Hainan, Wuzhishan, 13.VI.2017, ZJ Wu leg.; 3 ♂♂ (coll. H Huang), Hainan, Wuzhishan, V.2021, H. Huang leg.; 4 ♂♂ (coll. H Huang), Hainan, Diaoluoshan, V.2021, H. Huang leg.

Remarks. This subspecies is undoubtedly an undescribed taxon, which exhibits significant and stable morphological differences and sufficient molecular divergence from both the nominate subspecies and the above-described Fujian subspecies. However, we do not name this subspecies in the present study; instead, we leave it to Dr. GX Xue to name it. Many years ago, the second author (ZJ Wu) and Dr. GX Xue independently realized that the population of *Capila lidderdali* from Hainan represents a new subspecies, and each informed the first author of this discovery. For a long time, neither of them published this finding. Recently, the second author decided to collaborate with the first author to publish the new subspecies from Fujian, and we mutually agreed to respect Dr. Xue's independent discovery, leaving the Hainan subspecies for him to publish.

This subspecies differs from the nominate subspecies by having a more produced forewing apex in both sexes, a shorter forewing cell spot in males, and a straighter discal spot in forewing space 2 of females. It differs from ssp. *limini* by having a more pointed forewing apex and a less convex forewing termen in both sexes, as well as a much darker ground color on the upperside of both wings.

It is worth noting that the second author suspected that some females (Fig. 17) might represent a female form of this species, but molecular analysis reveals that they are actually females of *C. pauripunetata* Chou & Gu, 1994, which is characterized by less elongated hindwing postdiscal spots.

Range. Hainan.



FIGURES 19–20. Habitus of *Lethe luteofasciata* (Poujade), upperside & underside. Scale bar = 1 cm.

Nymphalidae

Lethe luteofasciata xiyuanae Huang, Wu & Yu ssp. nov. 黄带黛眼蝶溪湲亚种

https://zoobank.org/2F3D48BE-E44A-4CAA-9BF2-5EEC5C35E787

Fig. 20

Lethe luteofasciata: Lang, 2017: 93, partim on 1 ♂ from Tacheng, Weixi.

Holotype: ♀ (Length of forewing 24.0 mm): China, Yunnan, Lijiang, 2800 m, 30.VI.2025, YQ Huang leg. Deposited in the Biological Laboratory of Shanghai Normal University, Shanghai, China. Sequenced (PZ276990, PZ281159, PZ281180).

Paratypes: 1 ♂ (coll. P Li, Xi'an), same locality as holotype, VI.2023, P Li leg.; 2 ♂♂ (coll. Y Peng, Chongqing), Diqing Tibetan Autonomous Prefecture, Weixi, Tacheng, VI.2024, local collectors leg.; 1 ♂ (coll. SY Lang, Chongqing), Diqing, Weixi, Tacheng, 16.VII.2016, SY Lang leg.; 1 ♂ (coll. ZJ Wu, Fuzhou), Diqing, Weixi, Tacheng, VI.2024, local collector leg., dissected and sequenced (PZ276991, PZ281157, PZ281178).

Etymology. The subspecific name is dedicated to Miss Xi-Yuan Yu (于溪湲), daughter of the third author.

Diagnosis. This new species can be distinguished from the nominate subspecies of *Lethe luteofasciata* (Poujade, 1884), known from Sichuan (type locality: Mou-pin = Baoxing) and Chongqing (Fig. 19), by the following combination of male characters (the female of the nominate subspecies remains unknown):

1) Hindwing less elongate, with a markedly shorter dorsum (anal margin).

2) Hindwing underside with all veins outlined by whitish lines or stripes, whereas in the nominate subspecies the radius is not outlined by a white line.

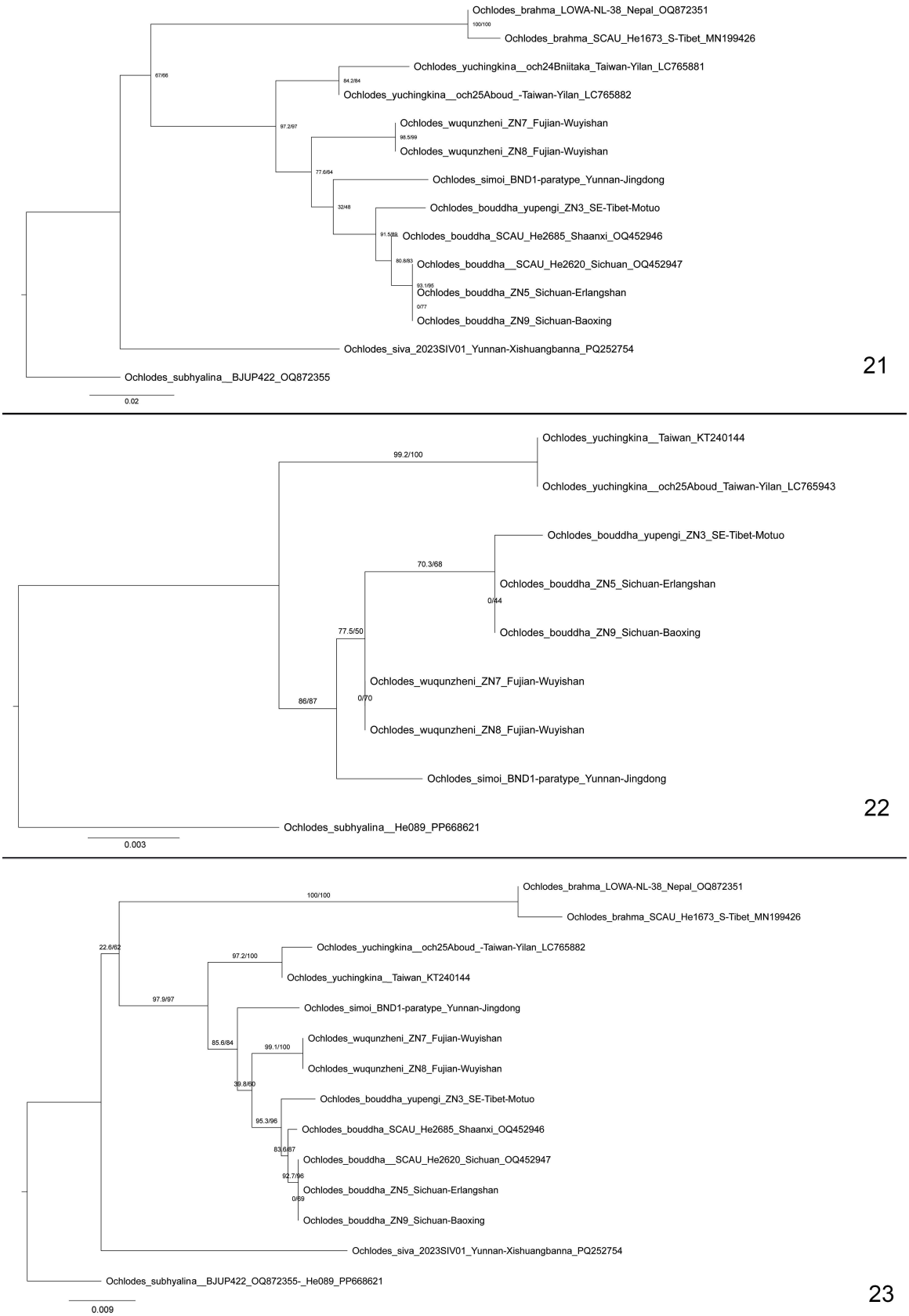
3) Hindwing underside postdiscal ocelli with blackish rings less distinct, often obsolete or ill-defined, and not as fully developed or clearly defined as in the nominate subspecies.

Discussion. Five males of the nominate subspecies collected from Lushan (Sichuan), Heizhugou (Sichuan), and Jinfoshan (Chongqing) were examined for morphological comparison, and one male from Lushan (very close to the type locality) and one male from Jinfoshan were sequenced for the molecular study. Four additional male specimens from Heizhugou and Kangding were available as photographic records in the literature (D'Abrera 1990; Lang 2017; Wu & Hsu 2017) and were consulted in this study.

In the molecular analysis, two male specimens of the nominate subspecies from different localities were sequenced and exhibited no variation in their COI, EF1a, or RPS5 sequences. The divergence between the two subspecies is evident in both the mtDNA and nuDNA gene trees (Figs 28–29), and is more pronounced than that observed for subspecific divergences in *Lethe albolineata* (Poujade, 1884) and *Lethe argentata* (Leech, 1891). The Kimura 2-parameter distance in the COI barcode region between the two subspecies of *Lethe luteofasciata* ranges from 0.017 to 0.019.

Notably, the *Lethe gracilis* (Oberthür, 1886) and *Lethe baladeva* (Moore, [1866]) groups are shallowly divergent in the nuDNA tree (Fig. 29) and combined tree (Fig. 27), and are not reciprocally monophyletic in the mtDNA tree (Fig. 28). They should therefore be regarded as a single group, which also includes *Lethe sicelides* Grose-Smith, 1893.

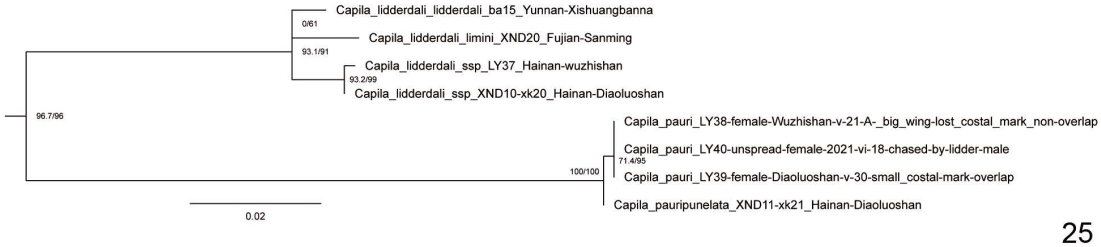
Range. NW Yunnan.



FIGURES 21–23. ML gene trees of *Ochlodes bouddha* and its relatives reconstructed with IQ-TREE: **21** Mitochondrial tree based on the COI gene (645 bp) **22** Nuclear tree based on Rps5 (572 bp) and EF1a (1,062 bp) genes **23** Combined tree based on COI, Rps5 and EF1a genes. All support values represent SH-aLRT/ultrafast bootstrap. The best-fit model for panel 21 is TIM2+F+G4, for 22 is K2P, and for 23 is TIM2e+I.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Ochlodes bouddha SCAU He2685 Shaanxi OQ452946													
2. Ochlodes bouddha ZN5 Sichuan-Erlangshan	0.006												
3. Ochlodes bouddha ZN9 Sichuan-Baoxing	0.006	0.000											
4. Ochlodes bouddha SCAU He2620 Sichuan OQ452947	0.006	0.000	0.000										
5. Ochlodes bouddha yupengi ZN3 SE-Tibet-Motuo	0.016	0.019	0.019	0.019									
6. Ochlodes wuqunzheni ZN7 Fujian-Wuyishan	0.034	0.037	0.037	0.037	0.037								
7. Ochlodes wuqunzheni ZN8 Fujian-Wuyishan	0.034	0.037	0.037	0.037	0.037	0.000							
8. Ochlodes simoi BND1-paratype Yunnan-Jingdong	0.032	0.035	0.035	0.035	0.035	0.041	0.041						
9. Ochlodes yuchingkina och24Bniitaka Taiwan-Yilan LC765881	0.050	0.053	0.053	0.054	0.053	0.046	0.046	0.054					
10. Ochlodes yuchingkina och25Aboud -Taiwan-Yilan LC765882	0.035	0.038	0.038	0.039	0.038	0.032	0.032	0.039	0.015				
11. Ochlodes siva 2023SIV01 Yunnan-Xishuangbanna PQ252754	0.076	0.076	0.076	0.076	0.080	0.078	0.078	0.073	0.085	0.076			
12. Ochlodes brahma SCAU He1673 S-Tibet MN199426	0.092	0.092	0.092	0.092	0.096	0.084	0.084	0.093	0.102	0.088	0.109		
13. Ochlodes brahma LOWA-NL-38 Nepal OQ872351	0.090	0.090	0.090	0.090	0.094	0.082	0.082	0.091	0.100	0.085	0.103	0.008	
14. Ochlodes subhyalina BJUP422 OQ872355	0.074	0.078	0.078	0.078	0.078	0.074	0.074	0.071	0.076	0.067	0.071	0.097	0.091

24



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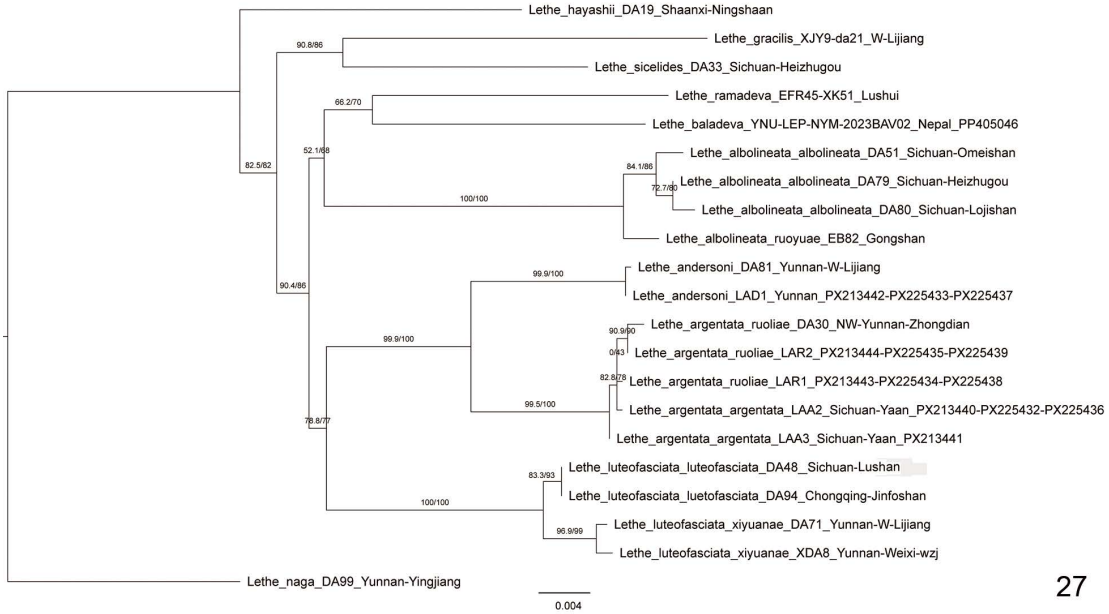
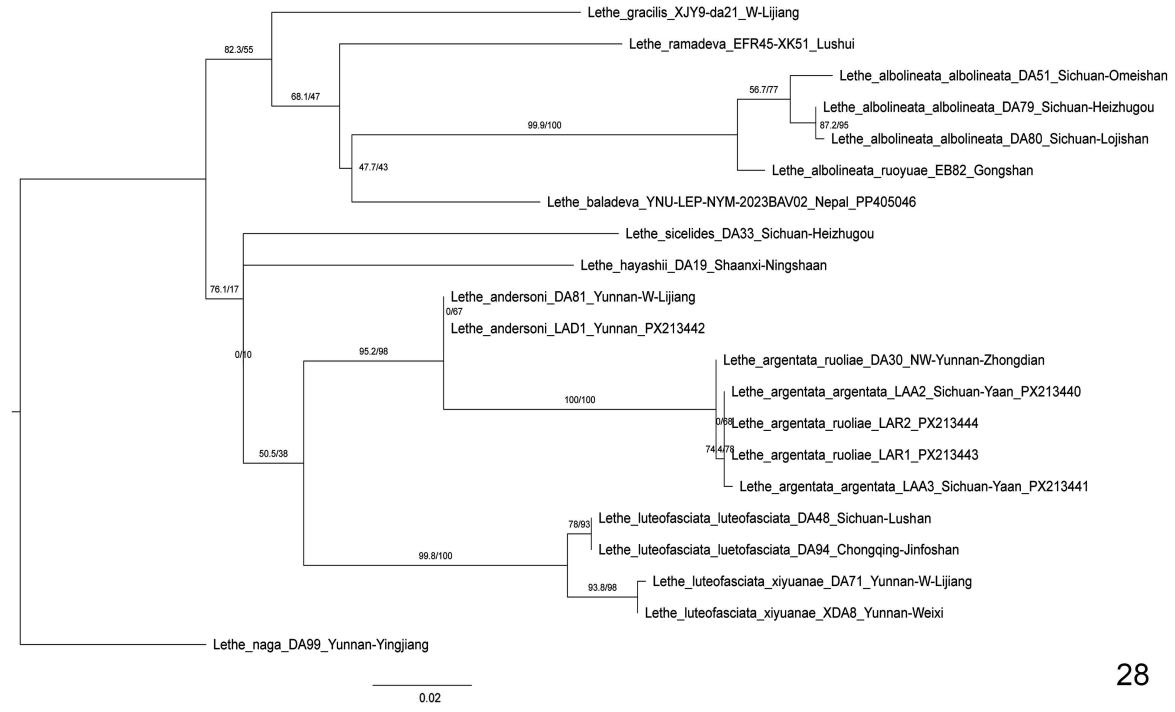
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Lethe naga DA99 Yunnan-Yingjiang																				
2. Lethe hayashii DA19 Shaanxi-Ningshaan	0.100																			
3. Lethe gracilis XJY9-da21 W-Lijiang	0.095	0.082																		
4. Lethe sicelides DA33 Sichuan-Heizhugou	0.088	0.088	0.076																	
5. Lethe ramadeva EFR45-XK51 Lushui	0.113	0.084	0.091	0.095																
6. Lethe baladeva YNU-LEP-NYM-2023BAV02 Nepal PP405046	0.091	0.081	0.069	0.079	0.069															
7. Lethe andersoni DA81 Yunnan-W-Lijiang	0.084	0.076	0.080	0.080	0.091	0.076														
8. Lethe andersoni LAD1 Yunnan PX213442	0.084	0.076	0.080	0.080	0.091	0.076	0.000													
9. Lethe argentata argentata LAA2 Sichuan-Yaan PX213440	0.097	0.100	0.076	0.085	0.101	0.079	0.046	0.046												
10. Lethe argentata argentata LAA3 Sichuan-Yaan PX213441	0.100	0.097	0.074	0.083	0.099	0.081	0.044	0.044	0.002											
11. Lethe argentata ruoliae LAR1 PX213443	0.097	0.100	0.076	0.085	0.101	0.079	0.046	0.046	0.000	0.002										
12. Lethe argentata ruoliae DA30 NW-Yunnan-Zhongdian	0.095	0.097	0.074	0.083	0.099	0.078	0.044	0.044	0.002	0.003	0.002									
13. Lethe argentata ruoliae LAR2 PX213444	0.097	0.100	0.076	0.085	0.101	0.079	0.046	0.046	0.000	0.002	0.000	0.002								
14. Lethe albolineata albolineata DA51 Sichuan-Omeishan	0.107	0.089	0.088	0.089	0.090	0.082	0.096	0.096	0.105	0.107	0.105	0.103	0.105							
15. Lethe albolineata albolineata DA79 Sichuan-Heizhugou	0.107	0.099	0.088	0.087	0.094	0.087	0.092	0.092	0.101	0.103	0.101	0.099	0.101	0.012						
16. Lethe albolineata albolineata DA80 Sichuan-Lojishan	0.109	0.101	0.090	0.085	0.092	0.089	0.094	0.094	0.103	0.105	0.103	0.101	0.103	0.014	0.002					
17. Lethe albolineata ruoyuae EB82 Gongshan	0.096	0.094	0.081	0.084	0.092	0.085	0.097	0.097	0.102	0.105	0.102	0.100	0.102	0.022	0.019	0.021				
18. Lethe luteofasciata luteofasciata DA48 Sichuan-Lushan	0.086	0.080	0.087	0.076	0.094	0.085	0.063	0.063	0.083	0.081	0.083	0.081	0.083	0.095	0.095	0.097	0.096			
19. Lethe luteofasciata luetofasciata DA94 Chongqing-Jinfoshan	0.086	0.080	0.087	0.076	0.094	0.085	0.063	0.063	0.083	0.081	0.083	0.081	0.083	0.095	0.095	0.097	0.096	0.000		
20. Lethe luteofasciata xiyuanae DA71 Yunnan-W-Lijiang	0.100	0.086	0.089	0.087	0.094	0.089	0.070	0.070	0.093	0.091	0.093	0.091	0.093	0.097	0.105	0.107	0.098	0.019	0.019	
21. Lethe luteofasciata xiyuanae XDA8 Yunnan-Weixi-wzj	0.098	0.086	0.091	0.086	0.096	0.089	0.068	0.068	0.091	0.089	0.091	0.089	0.091	0.099	0.103	0.105	0.096	0.017	0.017	0.002

26



27

FIGURES 24–27. 24 The Kimura 2-parameter distance in the COI barcode between samples of *Ochlodes bouddha* and its relatives **25** Mitochondrial tree of *Capila lidderdali* subspecies based on the COI gene (645 bp) **26** The Kimura 2-parameter distance in the COI barcode between samples of *Lethe luteofasciata* and its relatives **27** Phylogeny of *Lethe luteofasciata* and its allies based on the combined dataset (COI, EF1a, Rps5), reconstructed using ML analysis in IQ-TREE. Support values represent SH-aLRT/ultrafast bootstrap, under the best-fit model TIM2+F+R2.



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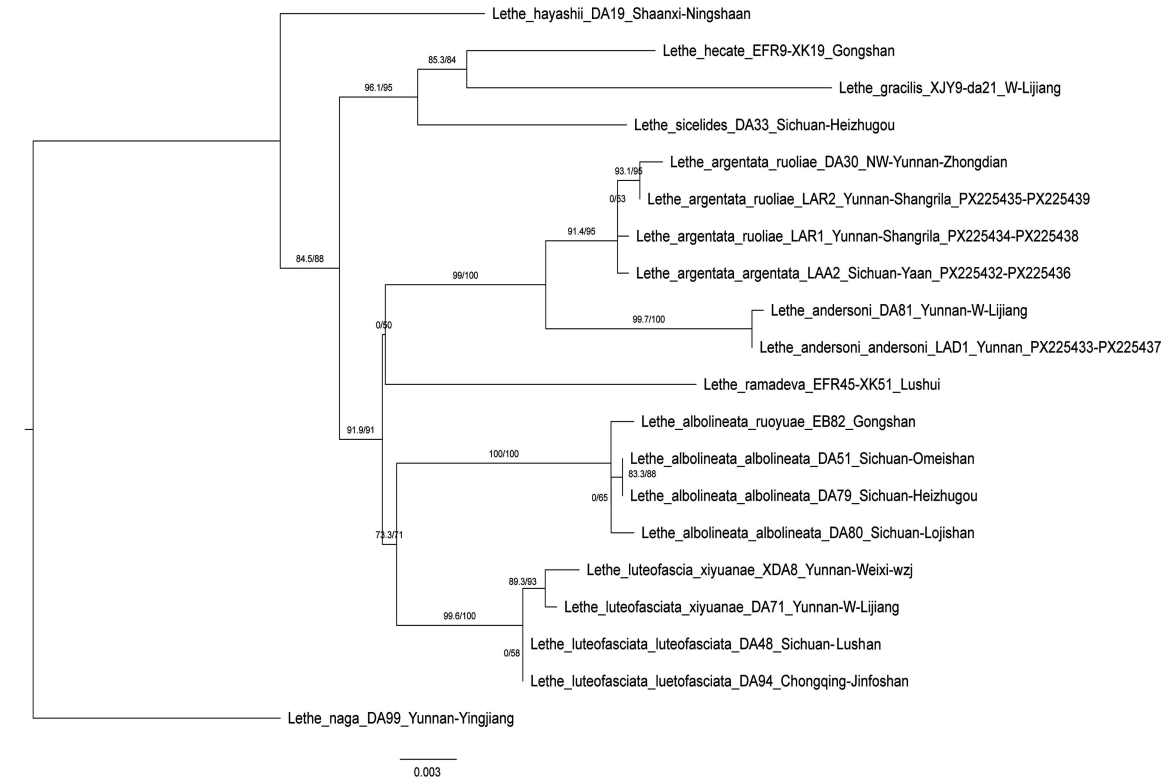

29

FIGURES 28–29. ML gene trees of *Lethe luteofasciata* and its relatives reconstructed with IQ-TREE: **28** Mitochondrial tree based on the COI gene (645 bp) **29** Nuclear tree based on Rps5 (572 bp) and EF1a (1,114 bp) genes. All support values represent SH-aLRT/ultrafast bootstrap. The best-fit model for panel 28 is TIM2+F+G4, and for 29 is TNe+R2.

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References

Chiba H & Hsu YF 1989: Revisional notes on Taiwanese skippers. Abstract. 36th Annual Meeting, Lepidopterologucal Society of Japan. *Tyô to Ga*, 40: 268.

Chiba H, Hsu YF & Shirôzu T 1992: Hesperiidae. *In*: Heppner JN & Inoue H (Eds) *Lepidoptera of Taiwan. Vol. 1. Part 2. Checklist*. Association for Tropical Lepidoptera, Gainesville, pp. 130–132.

Chiba H & Tsukiyama H 1996: A review of the genus *Ochlodes* Scudder, 1872, with special reference to the Eurasian species (Lepidoptera: Hesperiidae). *Butterflies*, 14: 3–16.

Chiba H, Tsukiyama H, Liang JY, Wang SM, Shen ZY & Hsu YF 2020: The types of skippers described by Shu-Iti Murayama (Lepidoptera: Hesperiidae). *Zootaxa*, 4801 (2): 280–290. https://doi.org/10.11646/zootaxa.4801.2.4

Chiba H, Tsukiyama H & Bozano GC 2025: *Guide to the butterflies of the Palearctic region, Hesperiidae part II*. Omnes Artes, Milano, 82 pp.

Cho S, Mitchell A, Regier JC, Mitter C, Poole RW, Friedlander TP & Zhao S 1995: A highly conserved nuclear gene for low-level phylogenetics: Elongation factor-1a recovers morphology-based tree for Heliothine moths. *Molecular Biology and Evolution*, 12: 650–656.

Elwes HJ 1888: A catalogue of the Lepidoptera of Sikkim, Part I. Rhopalocera. *Transactions of the Entomological Society of London*, 1888: 269–465, pls. VIII-XI.

D'Abrera B 1990: *Butterflies of the Holarctic Region. I. Papilionidae, Pieridae, Danaidae & Satyridae* (Partim). Hill House, 185 pp.

Evans WH 1949: *A catalogue of the Hesperiidae from Europe, Asia & Australia in the British Museum (Natural History)*. British Museum (Natural History), London, 502 pp.

Hsu YF 1989: Notes on the little known females of two Hesperiid species. *Chinese Journal of Entomology*, 9: 77–80.

Hsu YF 2013: *The Butterflies of Taiwan. Vol. 1. Hesperiidae, Papilionidae and Pieridae*. Morning Star Publishing Inc., Taichung, 397 pp.

Hsu YF, Chiba H, Tsukiyama H, Liang JY & Huang CW 2019: *Butterfly Fauna of Taiwan. Vol. III. Hesperiidae*. Forest Bureau, C.O.A., Taipei, 364 pp.

Huang H 2023: New or little known butterflies from China- 6. *Atalanta*, 54 (3/4): 309–336.

Huang H 2025: A classification of the genus *Lethe* Hübner, [1819] sensu D' Abrera (1985) from China 1- the *Zophoessa nicetas* (Hewitson, 1863) group (Lepidoptera, Nymphalidae, Satyrinae). *Atalanta*, 56 (1/2): 171–187.

Inayoshi Y 1999–2023: *Capila lidderdali* (Elwes, 1888). *In*: *A Check list of Butterflies in Indo-China, Chiefly from THAILAND, LAOS & VIETNAM*. https://yutaka.it-n.jp/ (accessed 1.IV.2026).

Inayoshi Y 2018–2023: *Ochlodes bouddha* (Mabille, 1876). *In*: *A Check list of Butterflies in Indo-China, Chiefly from THAILAND, LAOS & VIETNAM*. https://yutaka.it-n.jp/ (accessed 1.IV.2026).

Kalyaanamoorthy S, Minh BQ, Wong TKF, von Haeseler A & Jermiin LS 2017: ModelFinder: fast model selection for accurate phylogenetic estimates. *Nature Methods,* 14: 587–589.

Kandul NP, Lukhtanov VA, Dantchenko AV, Coleman JWS, Sekercioglu CH, Haig D & Pierce NE 2004: Phylogeny of *Agrodiaetus* Hübner 1822 (Lepidoptera: Lycaenidae) inferred from mtDNA sequences of COI and COII, and nuclear sequences of EF1-a:

karyotype diversification and species radiation. *Systematic Biology*, 53 (2): 278–298.

Lang S-Y 2017: *The Nymphalidae of China (Lepidoptera, Rhopalocera). Part II. Satyrinae (partim): Tribe Satyrini (partim): Subtribes Eritina, Ragadiina, Lethina, Parargina*. Tshikolovets Publications, Pardubice, 200 pp.

Leech JH 1892–1894: *Butterflies from China, Japan, and Corea 1, 2*. R. H. Porter, London, 681 pp., 43 pls.

Mabille P 1876: Diagnoses de nouvelles especes d'Hesperides. *Bulletin Societe Entomologigue de France*, 6 (5): 9–11.

Mabille P 1909: Hesperiidae, Skippers. *In*: Seitz A (Ed) *The Macrolepidoptera of the world 1*. Alfred Kernen, Stuttgart, pp. 330–354.

Masui A & Uehara J 1999: Butterflies Recently Collected in Lao R.D.P. (5). *Gekkan-Mushi*, 1999: 338: 18–23. [in Japanese]

Monteiro A & Pierce NE 2001: Phylogeny of *Bicyclus* (Lepidoptera: Nymphalidae) inferred from COI, COII, and EF-1a Gene Sequences. *Molecular Phylogenetics and Evolution*, 18: 264–281.

Murayama S & Shimonoya T 1963: On some interesting butterflies from Formosa with descriptions of 2 new species, 2 new races and 7 new aberrant forms. *Tyô to Ga*, 13 (3): 51–59. [in Japanese]

Osada S, Uémura Y & Uehara J 1999: *An Illustrated Checklist of the Butterflies of Laos P.D.R.* Mokuyo-sha, Tokyo, 240 pp.

Sugimoto S 2019: Notes on some Hesperid butterflies of Southeast Asia. *Butterflies*, 80: 52–54.

Wan J, Kim MJ, Cho Y, Jun J, Jeong HC, Lee KY & Kim I 2013: Sequence divergence and phylogenetic investigation of the Nymphalidae (Lepidoptera: Papilionoidea) occurring in South Korea. *International Journal of Industrial Entomology*, 26: 95–112.

Wu CS & Hsu YF (Eds) 2017: *Butterflies of China Vol. 1–4*. The Straits Publishing & Distributing Group, Fuzhou, 2036 pp.

Xiang CY, Gao FL, Jakovlić I, Lei HP, Hu Y, Zhang H, Zou H, Wang GT & Zhang D 2023: Using PhyloSuite for molecular phylogeny and tree-based analyses. *iMeta,* 2023 [e87]: 1–42. https://doi.org/10.1002/imt2.87.

Yuan F, Yuan XQ & Xue GX 2015: *Fauna Sinica, Insecta vol. 55, Lepidoptera Hesperiidae*. Science Press, Beijing, 754 pp. & 15 pls.

Zhang D, Gao F, Jakovlić I, Zou H, Zhang J, Li WX & Wang GT 2020: PhyloSuite: An integrated and scalable desktop platform for streamlined molecular sequence data management and evolutionary phylogenetics studies. *Molecular Ecology Resources,* 2020. 20 (1): 348–355. https://doi.org/10.1111/1755-0998.13096.

Additional information

Author contributions: First author: Conducted all research work, including morphological comparisons, species description, molecular analysis, and manuscript preparation. Second author: Collected the major part of the type series of the new taxa in Hesperiidae. Third author: Collected the major part of the Lethe material.

Conflict of interest: The authors have declared that no competing interests exist.

Data availability: All of the data that support the findings of this study are available in the main text.

Ethical statement: No ethical statement was reported.

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